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ABSTRACT

The paper looks at the value and need for theory, specifically as it relates to career development/career education for the deaf. A review of the literature provides an overview of major theoretical ideas regarding career development. An interactive adjustment model is described which incorporates four parameters: personal characteristics, environmental interactions, learning activities, and social experiences. The career development model is outlined in terms of corresponding postulates, deductions, and definitions. Several research hypotheses related to career development of the deaf are offered. Tables and figures illustrating the model conclude the paper. (SB)

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CAREER DEVELOPMENT THEORY: AN INTERACTIVE ADJUSTMENT MODEL FOR CAREER EDUCATION

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NTID's principal goal in doing research is to influence the education, training and career placement of deaf citizens through systematic examination of issues related to deafness. As one part of NTID's total research effort, the Department of Research and Development conducts descriptive and experimental research. Research findings are used in the development of programs and materials in the areas of learning and instruction, personal and social growth, and career development of deaf students. This document was developed in the course of an agreement with the U.S. Department of Health, Education and Welfare.

Abstract

The purposes of this paper are to establish the value and need for theory, to present an interactive model for career development, to illustrate its potential for adjusting to individual needs through career education, and to suggest needs for research. For the theoretical framework reported, a review of relevant literature is presented and summarized in the model. The model is analyzed to delimit postulates, deductions, and hypotheses for the theory, and rigorous investigation is called for to furnish evidence to support or disprove them. Finally, it is suggested that translations of both theory and research findings can be applied to the operational realities of classrooms, yielding better knowledge of career development and more practical activities for career eduction.

Career Development Theory:
An Interactive Adjustment Model for Career Education[1]

A Theory Base For Research Planning

Research is a disciplined inquiry designed to discover new information about the world. When we plan new research activities we should have a solid foundation in theory to increase the potential for getting meaningful and useful information. A theoretical framework can help define operational parameters, the scope and usefulness of proposed research, and where our efforts fit into the structure of knowledge known at a given time.

As defined by Kerlinger (1965, p. 11),

> . . . A theory is a set of interrelated constructs, definitions, and propositions that presents a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena.

The key terms in this definition are "interrelated," "systematic," "explaining," and "predicting."

The components of a theory are interrelated. Its terms and concepts form a synergistic connection and meaning between and among each other. With theory, congruity joins several ideas into a system of principles. A theory is also systematic. Its components are arranged in some orderly or methodological procedure to reflect the logic joining them.

The functions of a theory are to explain and predict. The theory should account for and give meaning to the facts and the suppositions upon which it is based. It should make them clear and understandable through scholarly analysis and description of their occurrences, relationships, and activities. In addition, how well a theory estimates probable future conditions is one vital measure of its usefulness--the validity of its predictions defines its power.

Beauchamp (1968) states that the great advances in science come through theory building because laws propogate when united in theory; that is, as basic postulates yield deductions, they can be tested, their validity determined, and they can then suggest new principles or relationships of a broader or of a more refined scope. As functional relationships among postulates are tested and established, gaps in present knowledge can be filled in or eliminated.

For these advantages, a theoretical framework should be stated clearly when we plan research. Such a framework provides an organized system to integrate new results into a meaningful whole rather than leaving them as a collection of fragmented, isolated studies. Facts by themselves can be interesting, but they're meaningless; they become meaningful as we establish their relationships to other ideas.

Theory construction should include at least three components--stated postulates, derived deductions, and basic definitions. Although the postulates do not require evidential support, they must be consistent with available research. Deductions are derived from the postulates. They provide the

means to assess variables included in the theory through the development of empirically testable hypotheses. Finally, the terms used in the theory should be defined with a conceptual description to clarify their meanings.

Snow (1973) identifies several criteria to evaluate the formal presentation of a theory. These criteria also identify how we should construct theories. They include:

1. All definitions and postulates should be explicit.
2. Both boundaries and limitations should be clear.
3. A theory should have internal, logical consistency.
4. Documentation should be consistent with empirical data.
5. Interesting hypotheses and predictions should be generated from it.
6. A theory should be testable through methods of disproof.
7. Parsimony should be the rule for accepting propositions, but oversimplification should be avoided.
8. A theory may be more useful if it is quantifiable.
9. The presentation should be clearly and simply stated, avoiding unnecessary formalization and symbols.

For the theoretical framework described herein, a review of relevant research literature is presented, synthesized in a model, and followed by postulates, deductions, and definitions. The criteria suggested by Snow have been used as guides.

This is the first formal presentation of the theoretical framework. Its deductions and, hence, its postulates, have not been analyzed or tested

through empirical research. Therefore, it seems most appropriate to label it as a proto-theory rather than as a formal theory. It is expected that tests of scrutinizing peers and rigorous investigation will dictate revisions in this statement. Eventually, it may evolve into a more formal and valid theoretical position.

A Summary of Major Theoretical Ideas

A summary of some of the major theoretical ideas and research findings related to career development identifies results and plausible postulates appropriate for career education. Comprehensive reviews of career education-related literature have been completed by Herr (1972, 1977) and Osipow (1975, 1976). Their identification of appropriate literature forms a core for the documents searched and reviewed for this brief overview.

Roe (1956) describes a two-dimensional system to classify careers. The first dimension, "group," indicates a primary focus of activity in a given career area; the second, "level," refers to the degree of personal autonomy and the level of skill and training required. If, according to Roe and Sigelman (1964), interests are a major factor in career choice, then interests and interpersonal interaction reflected within the group dimension determine in what area and how well an individual fits into a given career. This, however, does not give any indication of the level of function needed to perform in the career. For this, the degrees of responsibility, capacity, and skill, (as represented within the level dimension) are the main determinants, the primary one being reponsibility.

Holland (1973) describes a theory of career decision making concerned with personal and career situation characteristics. Briefly, he proposes that person-environment interactions determine vocational, educational, and social behavior; that is, a person will seek an occupational environment most compatible with one's personality. In addition, Lofquist and Dawis (1969) identify work adjustment as a process of interaction between an individual and the work environment. They predict work adjustment from a knowledge of the individual's work personality (abilities and needs) and the work environment (performance and conditions).

Krumboltz, Mitchell, and Jones (1976) describe a social learning theory of career decision making. Their theory identifies interactions of genetic factors, environmental conditions, learning experiences, cognitive and emotional responses, and performance skills. Continuous movement along one career path or another throughout an individual's life span characterizes the career selection process. Concluding their position, they suggest career selection and occupational placement are influenced by and result from complex interactions of these various factors.

Occupational choice, according to Ginzburg (1972), is a life long process of decision making. In it, an individual searches for the optimal fit between preparation for work and the realities of the working world. In many instances, occupational choice is coterminous with one's working life; both decisions during training and preparation, and continuing changes during work and life, influence career development. Since all of an individual's principal needs

cannot be satisfied, decisions about jobs and careers are made to optimize the individual's satisfactions by finding the best possible fit between priority needs and desires and the opportunities and constraints confronted in the workplace.

Super (1963) suggests that career-actualization is a function of a person's self-actualization. The concept of self plays a dominant role in career development because the career permits playing a role appropriate to the self-concept. More specifically, the occupational terminology used by a person translates into psychological terminology dictated by that person's self-concept. The occupational terminology used is at least partly a translation of the self-concept.

Career development, according to Super, can be described in life stages and developmental tasks. These can be translated into attributes and behaviors. Moreover, they may determine career maturity as they describe an individual's progress through different stages.

Whereas existing models of vocational maturity have concentrated on adolescence, vocational maturity in adulthood is the subject of another study by Super (1977). Identifying four adult career development tasks (exploration, establishment, maintenance, and decline), Super declares operational definitions of vocational maturity are different for adolescents and adults. This extends the notion of lifelong career development through the adult mid-career stages. Furthermore, Levinson (1977), although focusing on management development activities for adults, proposes closer correspondence between human

resources development activities and the current career and life stages of the individual adult.

Zytowski (1969) presents nine postulates to characterize and distinguish developmental stages and patterns of vocational participation thought to be unique to women. However, just as for men, he describes the life span of women in terms of stages. The life role of women, he notes, is orderly and developmental and may be divided into sequences according to the preeminent task in each.

Pietrofesa and Splete (1975) note that career guidance, once understood as a process of simply matching people to jobs, is now understood as a complex process of human development. They, too, suggest that career development can be described in maturational terms to denote progression through life stages and through mastery of developmental tasks at each stage. Although development is continuous, certain aspects are dominant at different times and can be facilitated best at those times. Intervention, they continue, should help individuals during their normal maturational stages; however, provisions should be made for individual differences in progressing through these stages. Where optimal development has been impeded through excessive deprivation of certain factors, special and individualized assistance may be required.

Tiedeman and O'Hara (1963) examine the problem of development in relation to personality and career. They suggest career differs from personality only in a confrontation with the problems of living. Since attitudes help determine one's perception of self in the world, and attitudes form around

experiences, appropriate life experiences are necessary to career development. The school, they add, is of primary importance to different developmental levels identified with career development; planned school experiences can order and control them. Furthermore, they identify time as important to career development, as the individual fits a career into the life span.

Hoyt (1974) observes that career education has been implemented through a combination of research evidence and pragmatic observations. Several assumptions established from a research and experiential base are offered for program implementation. One describes a concern for deprivation. Excessive deprivation in any aspect of growth and development, he suggests, can impede career development. Moreover, special considerations may be needed in career development programs for those enduring such deprivation.

Walberg and Marjoribanks (1976), for example, identify parental attention as an influence on career maturity and development. They suggest differential environmental processes in the family operate selectively to develop certain potential abilities and to leave others relatively underdeveloped. And Lacey (1973) suggests that, for a deaf person, the family can affect the development of appropriate career behaviors, because limited language and experience affect perceptual development. This, in turn, affects a deaf youngster's knowledge of self and reality. A restricted life space limits exposures to the work lives of parents and significant adults, reduces opportunities to imitate appropriate work roles, provides a secure, safe, and predictable environment, and restricts the development of familiarity with customs, laws, and institutions in the larger community. Such limited socio-cultural mobility

can lead to fear of the unknown and frustration and ambiguity in a bi-cultural (deaf versus hearing) world. Thus, writes Lacey, exploration of career opportunities is limited for deaf people.

Language problems are central to the education of hearing-impaired children and to their becoming productive members of society, according to Suppes (1974). He notes however, that the cognitive performance of deaf children is as good as that of normal-hearing children, when the cognitive task does not directly involve verbal skills.

This deprivation problem is not particularly unique to deaf individuals. Similar concerns can be identified for others handicapped or disadvantaged from personal or environmental deprival, including other social, economic, ethnic, cultural, or physical minority groups. Career exploration is limited for them, too, through restricted life spaces and limited exposures in ways that are both similar and different.

This brief overview excludes many useful references from sociology, vocational psychology, and education. It was meant to define the general parameters within which a proto-theory could be stated. Rather than continue its conceptual development, testing its usefulness may be more valuable at this stage. The purposes of this paper are to establish a theory base for career education through career development constructs and to encourage its application through research to the operational realities of schools and learning.

An Interactive Adjustment Model

A synthesis of the literature reviewed is represented in the model depicted in Figure 1. How an individual's career development grows depends upon four parameters: personal characteristics, environmental interactions, learning activities, and social experiences.

Insert Figure 1 about here

Personal characteristics and environmental interactions together define the individual and the development stages unique to that person. Learning activities and social experiences together define the educational effort and the instructional tasks prescribed by that effort. Likewise, interaction between personal characteristics and learning activities determines educational achievement. And environmental interaction with social experiences delimit one's work world experiences. Thus, four second-order factors arise from interactions between these first-order parameters: developmental stages, work world experiences, instructional tasks, and educational achievement.

Interactions between the factors of developmental stages, educational achievement, and work world experiences determine particular stages unique to the individual. Resulting are third-order variables of career development stages specific to learning activities and to social experiences. Inferences about one's developmental stages can thus be made by observation of one's progress through intellectual and socialization stages.

Instructional tasks also interact with educational achievement and work world experiences. These interactions result in variables related to achievement and experiences: namely, cognitive and affective instructional tasks and psycho-motor instructional tasks.

As the educational achievement factor interacts with developmental stages and instructional tasks, intellectual stages and cognitive and affective tasks also result. And socialization stages and psychomotor tasks result, too, from interactions of work world experiences with developmental stages and instructional tasks. Hence, third-order variables are identified from interactions between the second-order factors. These include intellectual stages, socialization stages, psychomotor tasks, and cognitive and affective tasks.

The model places observable competencies in its center as a tangible focus of the dynamic interactions between the first-order parameters, second-order factors, and third-order variables. Notice the effect on observable competencies when any one or combination of these first, second, and third-order areas in the model increases or decreases. For example, the third-order variables have boundaries bordering and defining the area of observable competencies. If these boundaries change, then so will the area representing competencies. Therefore, variation in the variables of intellectual and socialization stages and of cognitive, affective, and psychomotor tasks can cause variation in the competencies mastered and demonstrated by an individual. We can infer that these four variables, then, directly influence one's attainment of career development competencies.

Furthermore, the competencies and variables vary with the factors of instructional tasks, developmental stages, educational achievement, and work world experiences. As any of these factors enlarge or decrease, they directly affect the variables and indirectly affect the expression of competencies. Likewise, the parameters have direct influence on the definition of factors, indirect influence on the variables, and least direct influence on the actual demonstration of competencies.

Another characteristic of the model is a transition from the general to the specific as we move through the parameters, factors, and variables toward the center. Career development is generic and abstract. Observable competencies are precise and definite. Table 1 lists the components of the model from the generic to the precise.

Insert Table 1 about here

Perhaps a simplified example may help clarify the complexity of these interactions. Suppose career decision making skills have been identified as a priority learning cluster for a school's career development effort. A desired observable competency from this effort is for the student to list or describe personally important values. The values described or listed will result, in part, from the successes and failures the student has experienced in cognitive and affective tasks. These tasks are a result of instructional tasks designed to optimize the student's educational achievement. The student's potential for educational achievement is a function of personal

abilities and aptitudes and the learning activities included in school curricula. The instructional tasks were designed in response to the curricula and social transactions between teachers, peers, family, and other significant instructors in the student's life.

Therefore, changes in social experiences with significant others, learning activities in the school curriculum, and personal characteristics affected by deprivations and excesses can affect an individual's educational achievement and the instructional tasks designed for that person. Instructional tasks and educational achievement can define the more specific cognitive and affective tasks prescribed for the student. And these can influence, to some degree, the development and expression of personal values. Of course, as the other variables are considered, their interactions and effects upon the student's identification of personal values become even more complex.

Internal and external characteristics establish the parameters for individual career development and define career development stages and instructional tasks. These stages and tasks can be described by observable attributes and behaviors dominant at different times corresponding to individual development and maturation. Although environmental experiences may vary greatly, most people grow and develop in generally the same ways following the same patterns. Thus, we assume most people follow the same general stages during career development and require similar tasks for growth.

Career development, however, can be impeded through the deprivation of certain factors at various times. We plan in-school and out-of-school

experiences at different learning levels to help individuals achieve the attributes and behaviors characteristic at certain times. Special experiences may be necessary at other times to overcome the effects of deprivation on the expression of career development competencies.

The deprivation of listening skills in deaf people, for example, has restricted the development of their speaking skills. Deprivation of hearing and restriction in speaking affect the achievement of those career development competencies most closely related to requisite language skills. Historically, the deaf (as well as other handicap and minority groups) have had limited social, economic, and cultural mobility. Language handicaps have limited social contacts, economic advancement, and cultural integration. Special activities through appropriate career education are necessary to help the deaf achieve those career development attributes and behaviors most affected by language dependence.

Deprivation in any of the parameters of the model results in less influence for that parameter in the model. This creates a "ripple effect." The factors and variables related to the deprived area decrease in size as well. This impacts upon the observable competencies of career development. Figure 2 illustrates an example of the effects of deprivation in personal characteristics caused by, say, a hearing impairment.

Insert Figure 2 about here

This is a simplified example, because it shows each of the other parameters contributing equally to the acquisition and demonstration of career development competencies. This might not be the case in real life. However, the important observation is that as one parameter decreases, the observable competencies also decrease. But there are influences, too, on the factors and variables. Educational achievement, developmental stages, socialization stages, and cognitive and affective tasks are also reduced when there is a reduction in personal characteristics. This represents the situation faced by the deaf child, if the other parameters are comparable to those of other (i.e., normal-hearing) children. But notice, too, that for the expression of the reduced competencies to occur, psychomotor tasks must be increased.

Ultimately, a continuing decrease in any parameter will result in the elimination of observable competencies. On the other hand, successful intervention to overcome the effects of deprivation can increase the acquisition of career development competencies. An enlargement in any one area can result in an increase in competency attainment; however, there is a limiting factor to such an increase. Observable competencies are limited by the boundaries of the least influential parameter.

Similar processes occur when we see the converse of deprivation. Figure 3 illustrates an enlargement in the parameter of learning activities resulting from, for example, increased activity in career education. Now the competency area increases, as well as the factors of instructional tasks and educational achievement, and the variables of intellectual stages and psychomotor tasks.

Socialization stages, however, have a lesser influence on competency attainment when learning activities overwhelm the other parameters in this manner.

Insert Figure 3 about here

So far, we have examined the interactions of career development parameters at a single point in time. However, career development is a lifelong process. A three-dimensional representation of the model can be used to define an individual's lifetime career development. With its myriad interactions and adjustments, career development can be thought of as following a progression from individual slices established at finite points in time to an integrated and synergistic whole. In this manner, one's life space can be assumed to be tubular in form as the circular career development model passes through time. This life space tube is bounded by lines of force much like a magnetic field is established by a magnetomotive force from magnetic induction. The outer boundaries of the four parameters moving through time define the outer limits of this career development tube.

Figure 4 illustrates the career development "tube of induction." The tube represents an individual's life space, bounded and delimited by lines of force representing career development for that person across time.

Insert Figure 4 about here

Observable competencies can change during the period of one's life. Such change depends upon interaction among the four parameters along the time dimension. This illustrates the potential for dominance of certain attributes and behaviors at different times. General career development stages can thus follow individual development and maturation patterns.

To summarize, career development is a concept which refers to the broader areas of personal, social, and vocational maturation. Its purpose is to help one grow toward economic independence through work. Career education is a particular type of intervention in the types of behaviors subsumed within career development. It is limited to the teaching and learning of attitudes, knowledge, and skills, usually in the school setting, and related to career development.

Teaching and learning represent reciprocal influences in the educational arena. Whether directing or discovering, both are intervening activities to promote growth and development. To the extent that interventions in the parameters, factors, and variables are possible, career education has an influence on career development.

It seems reasonable to assume that activities can be designed to stimulate interactions among the model's components or to compensate for areas of deprivation. This, then, is the purpose of career education--to interact with the parameters, factors, and variables of career development to promote the attainment and demonstration of career development competencies.

The Theoretical Framework

The career development model supports a number of postulates and deductions:

Postulate 1. Career development is determined by the interactions of four parameters: personal characteristics, environmental interactions, social experiences, and learning activities.

Deduction 1.1 To the extent that the four parameters can be controlled, career development can be translated from a generic concept through parametric interactions to precise competencies that can be learned.

Deduction 1.2 Greater interaction between the four parameters increases the influence of the more tangible second-order factors and third-order variables on the expression of competencies, and increases the number of competencies as well as the liklihood of their attainment.

Deduction 1.3 If the four parameters do not have equal influence in defining an individual's career development, the one having least influence can be defined as being in a state of deprivation, and boundaries of this least influential deprival parameter are the limiting factors

for the attainment of career development competencies.

Deduction 1.4 Gain, or enlargement, in any one or more of the parameters through increased activities or aptitudes increases the attainment of career development competencies to the extent allowed by parameter boundary limitations.

Postulate 2. Career development is a lifelong process.

Deduction 2.1 Progression of the four interacting parameters through time defines the career development of an individual.

Deducation 2.2 Gain or deprivation in any one or more of the parameters through time establishes patterns of dominance and recession in career development.

Deduction 2.3 While career development stages can be described, individual differences and adjustments in processing through them can be expected.

Postulate 3. Career education can modify individual career development.

Deduction 3.1 Career education intervention can increase the boundaries of any one or more of the four parameters, thus increasing career development competency attainment.

Deduction 3.2 Career education intervention over time results in expansion of the career development of an individual.

Deduction 3.3 Special and intensive career education intervention at times when certain stages are dominant leads to optimal career development.

Deduction 3.4 Differential career education processes can operate selectively to develop certain competencies and leave others relatively underdeveloped.

Deduction 3.5 The influence of career education on career development is largely dependent upon language.

These postulates and deductions form the backbone of the proto-theory. Certain terms, however, must be defined to clarify their meanings in these statements.

Definition 1. Career development: the process of natural and learned growth leading to advancement in a person's work-related behavior.

Definition 2. Career education: the processes of formal and informal teaching and learning that help one attain a developmental interaction with career development constructs to promote the attainment and demonstration of career development competencies.

Definition 3: Cognitive and affective tasks: a third-order variable resulting from interactions of second-order factors to produce events that catalyze the acquisition of knowledge, understandings, emotions, and feelings.

Definition 4: Competencies: demonstration of the specific abilities and skills that conform to standards of work-related behaviors.

Definition 5: Developmental stages: a second-order factor resulting from parametric interactions that defines different degrees of personal growth in mental, physical, and behavioral areas.

Definition 6: Educational achievement: a second-order factor resulting from parametric interactions that defines successful attainment of teaching and learning objectives.

Definition 7: Environmental interactions: a parameter resulting from the reciprocal influence between external conditions and the individual, such as opportunities, constraints, responsibilities, and performances. affecting the individual's life and development.

Definition 8: Language: a system of signs, sounds, gestures, and marks used to communicate words, ideas, and feelings, determined by an indication of mutual understanding between people.

Definition 9: Instructional tasks: a second-order factor resulting from parametric interactions that defines teaching events required for meaningful learning.

Definition 10: Intellectual stages: a third-order variable resulting from interactions of second-order factors to produce different degrees of personal knowledge and understanding.

Definition 11: Learning activities: a parameter including those functions and operations planned to increase an individual's acquisition of knowledge, attitudes, and skills.

Definition 12: Personal characteristics: a parameter including the traits and qualities unique to an individual, such as interests, attitudes, values, personality, needs, and abilities.

Definition 13: Psychomotor tasks: a third-order variable resulting from interactions of second-order factors to produce events that catalyze the acquisition of skills and technical proficiencies.

Definition 14: Social experiences: a parameter resulting from those events and activities participated in with other people, including family, peers, and community.

Definition 15: Social stages: a third-order variable resulting from interactions of second-order factors to produce different degrees of productive participation with other people.

Definition 16: Work world experience: a second-order factor resulting from parametric interactions that defines personal and direct impressions of occupational activities.

The Need for Research

Throughout this discussion, the need for research has been noted. Career development theorists depend upon research information to mold the shape of their theoretical positions. Especially with this proto-theory, rigorous investigation is called for to furnish evidence to support or disprove its postulates and deductions. A primary interest is how career education influences career development. Perhaps a major research effort in career education

can test the axiomatic notions that career development results from an interaction of various parameters and that an individual's lifelong career development reflects adjustments to the excesses and deprivations encountered through these interactions. Future research can be related to the theoretical framework described herein and can be identified from an analysis of that framework.

As a formalized concept, career education is relatively young. Herr (1977) notes that since career education is young, it is not yet possible to extract evaluation or research findings that testify to the long-term effects of it on the knowledge, attitudes, or skills of persons exposed to it. The vitality of career eduction, he adds, must be inferred from its growth, the attitudes held about it, and the evidence of short-term gains to which it contributes.

Obviously, much still remains to be done in career education research to answer questions related to the impact of career education programs on career development. Problems with research design and methodology may be inversely proportional to the age of career education as a formal concept. Few studies have investigated student learning and development when compared to the concerns of program and project evaluation. Such concerns relate to the use of time, staff, and resource needs for the implementation of demonstration programs or projects.

Our direct concern is assisting the career development of deaf persons. Although the model and theoretical framework are generally applicable to any individual or groups of people, our examples relate specifically to the

deaf. For example, it is generally assumed that people possess a variety of choices concerning their careers; for the deaf person, however, these choices are limited. It is also assumed that a person enters an occupation to satisfy personal interests and values, but for the deaf person, entry may follow a path of least resistance and environmental manipulation caused by the hearing handicap.

There are several interesting research hypotheses the proto-theory can generate related to career development of the deaf. A sampling includes:

Hypothesis 1.3.1 Excessive deprivation of hearing abilities (a personal characteristic) limits the attainment and demonstration of career development competencies.

Hypothesis 1.3.2 A deprivation in hearing abilities (a personal characteristic) requires an increase in psychomotor tasks for the attainment of career development competencies; therefore, programs in technical areas requiring psychomotor skills will be more helpful for the acquisition of those competencies than programs in liberal arts areas emphasizing cognitive and affective domains.

Hypothesis 1.4.1 Increasing involvement in career education curricula (a learning activity) will increase the probability of career development competency attainment.

Hypothesis 3.1.1 The family plays a proportionately greater role in the attainment of career development competencies by deaf people than for those not handicapped by deafness.

Hypothesis 3.6.1 Optimal acquisition of career development competencies for the deaf occurs in those career education activities that do not directly require verbal skills.

Research designed to examine these hypotheses should result in suggested applications for career education practitioners. Most important, though, is the role of research in the validation of theoretical constructs. As theory becomes established, our knowledge of the facts it encompasses can be used to predict the probability of learner success in activities generated from it. This theoretical presentation now awaits results from research to determine its usefulness in predicting learner achievement in career development through career education.

Reference Note

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Table 1

The Parameters, Factors, and Variables of

the Interactive Adjustment Model

From Generic Career Development	to	Precise Observable Competencies
Parameters	**Factors**	**Variables**
Personal Characteristics	Developmental Stages	Socialization Stages
Environmental Interactions	Work World Experience	Psychomotor Tasks
Social Experiences	Instructional Tasks	Cognitive and Affective Tasks
Learning Activities	Educational Achievement	Intellectual Stages

Figure Captions

Figure 1. The parameters, factors, and variables of career development resulting in observable career development competencies.

Figure 2. The theoretical model for career development showing the effects of deprivation in personal characteristics.

Figure 3. The theoretical model for career development showing the effects of enlargement in learning activities.

Figure 4. The career development "tube of induction."

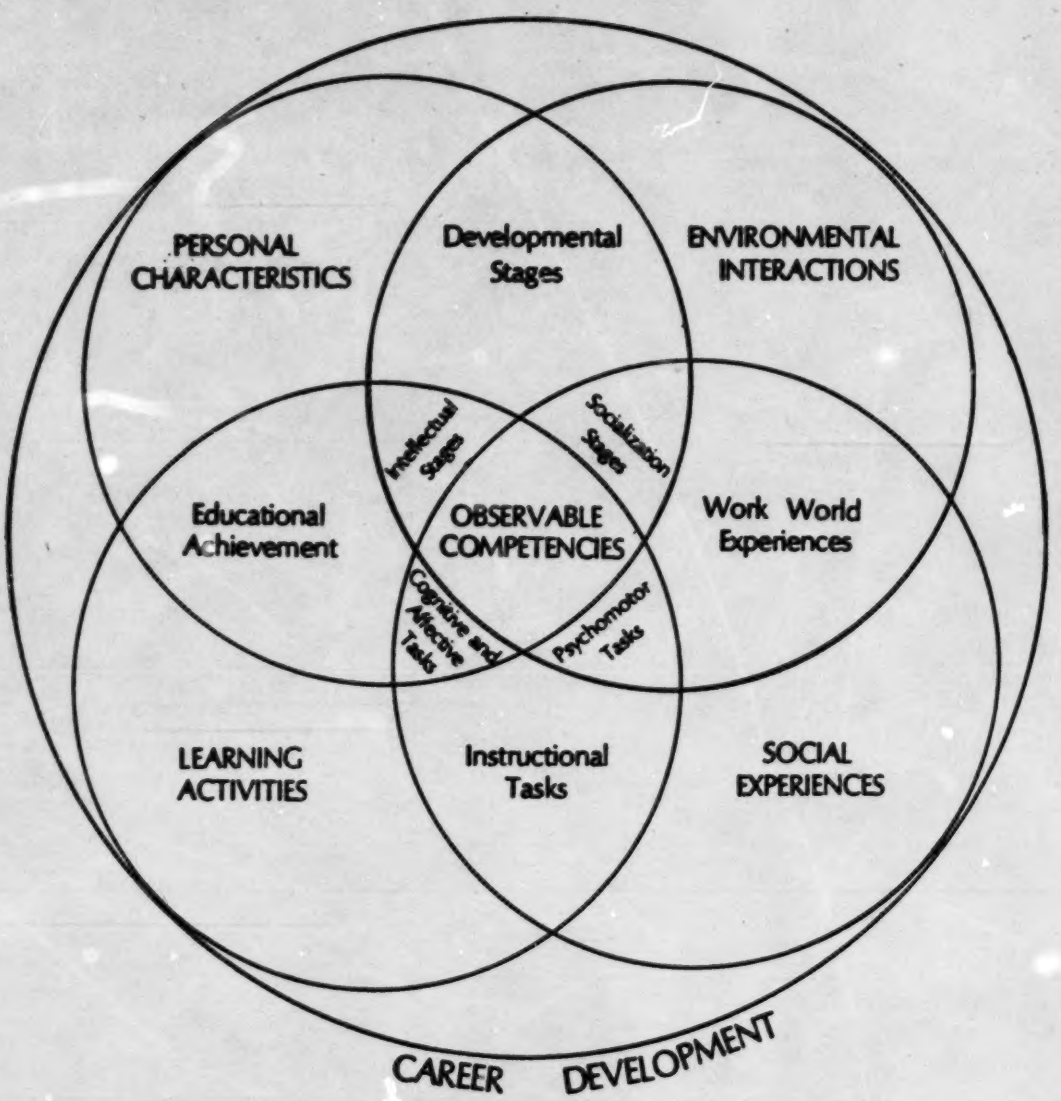

Figure 1. – The parameters, factors and variables of career development resulting in observable career development competencies.

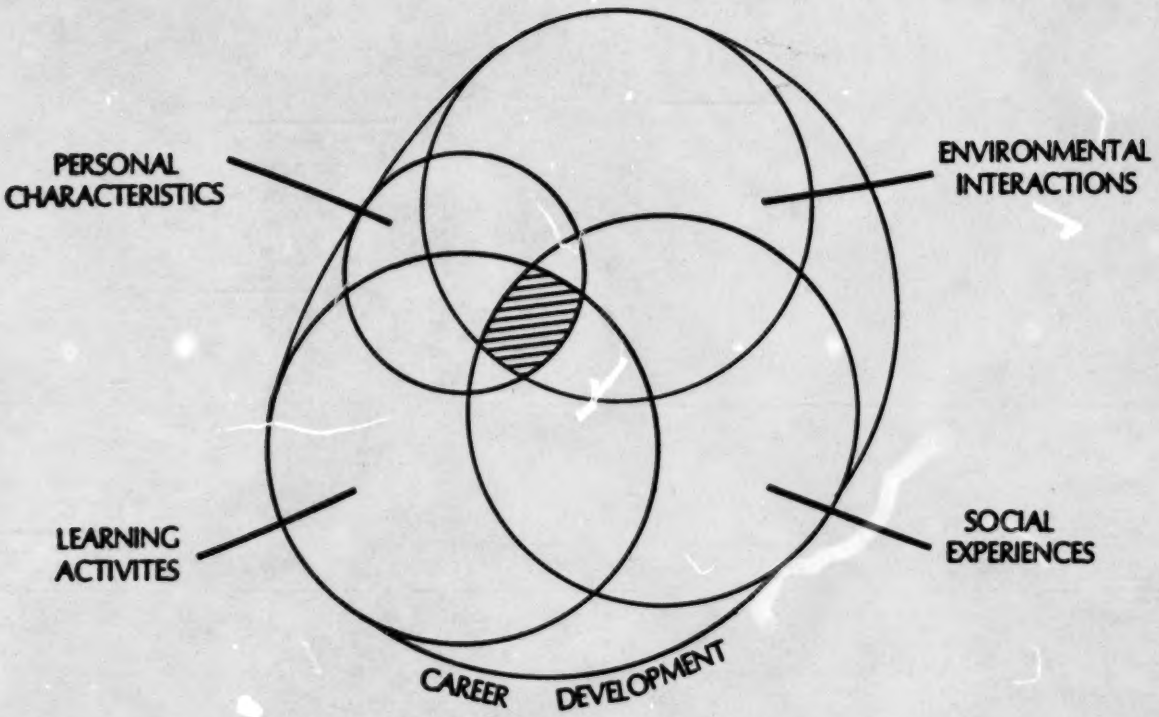

Figure 2 – The theoretical model for career development showing the effects of deprivation in personal characteristics.

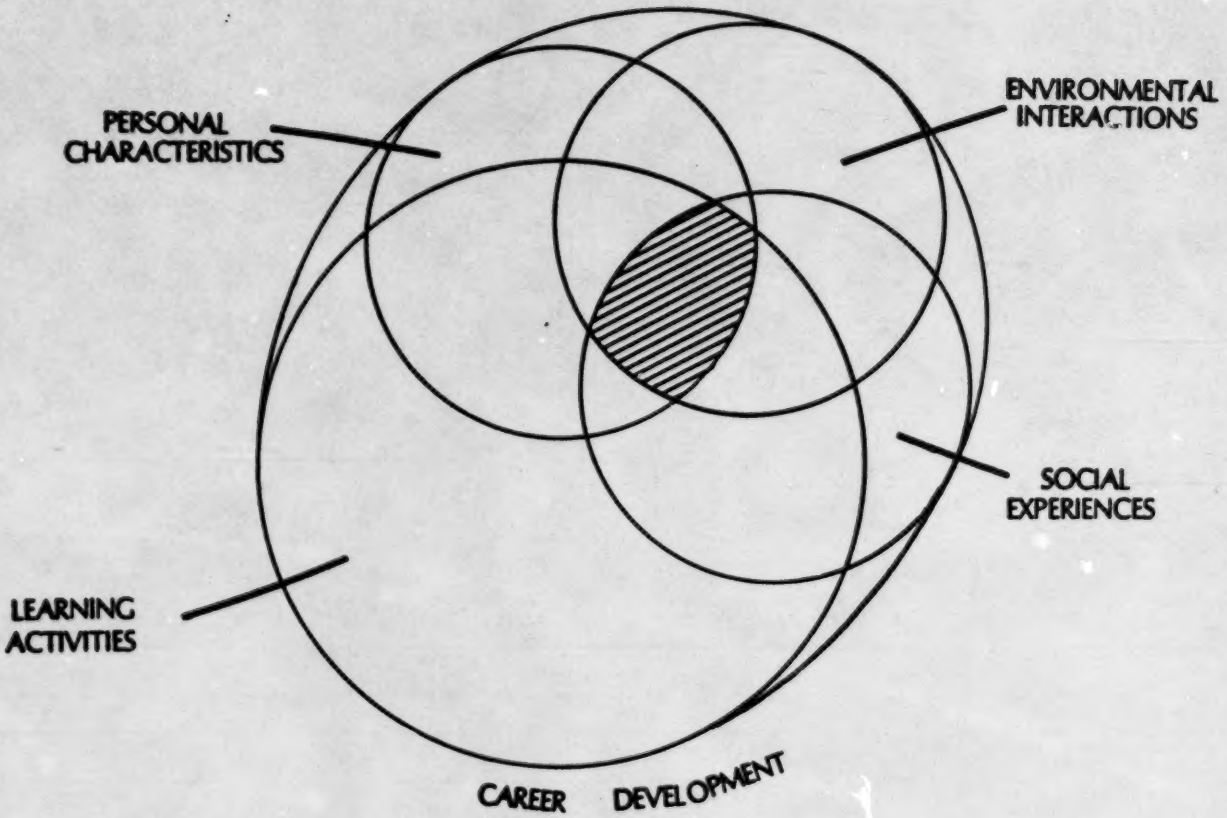

Figure 3. – The theoretical model for career development showing the effects of enlargement of learning activities.

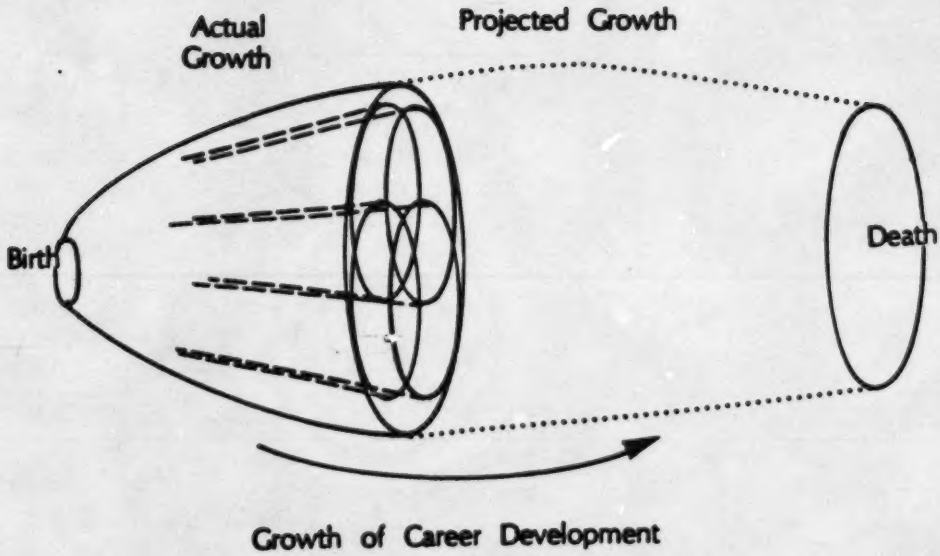

Figure 4. – The Career Development Tube of Induction.